

**METHOD AND APPARATUS FOR PERFORMING COMPUTATIONS AND  
OPERATIONS ON DATA USING DATA STEERING**

**ABSTRACT**

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A data processing system architecture is based upon a hardware engine that includes a plurality of functional units and data routing units that interconnect the functional units. The hardware engine performs operations and computations on data as the data traverses paths through the functional units under control of software. The functional units include logic resources, examples of which are flip-flops, latches, arithmetic logic units, random access memory, and the like. The routing units are responsive to the software control signals that are turned on or off to steer the data through these resources. Operations and computations are accomplished according to the steering of the data through the functional units, rather than according to decoding of operation commands that control the functions performed, as typical in the prior art.